

Conditions Necessary to Ensure Compliance with Water Quality Standards or Other Appropriate Water Quality Requirements of State Law

Phosphorus Mixing Zone

When DEQ considers authorizing a mixing zone that exceeds 25% of the volume of the receiving water, a mixing zone study may be performed to learn more about the effluent plume. In this case the facility is requesting mixing zones for phosphorus of 47% from June – September and 60% from October – June, so a study was performed. The outcome of the study indicated that during the low flow timeframe, conditions exist that are contrary to the WQS mixing zone rules (IDAPA 58.01.02.060). Briefly these conditions are: during low flow the effluent plume hugs almost a mile of shoreline; the plume encompasses almost the entire width of the river; and the outfall is located in an area of poorly mixed slack water. It may be possible to improve this situation without reducing the amount of phosphorus discharged. To determine if WQS can be met by modifying the outfall the following work shall be completed unless the permittee, through regionalization, can meet a 25% phosphorus mixing zone in the Pend Oreille River (see “Compliance Schedule with Regionalization Option,” below):

1. By three (3) years after the effective date of the final permit, the permittee must provide for DEQ approval, a preliminary engineering report (PER) that examines how to improve mixing and meet WQS by modifying or relocating the outfall pipe. This report must include a modeling study using the Cormix model of the phosphorus plume that demonstrates that proposed modifications and/or relocation will meet WQS. Baseline data used in DEQ’s initial study shall be utilized as much as possible to achieve comparable results. An alternative to modeling is to conduct a DEQ reviewed and approved dye study (or equivalent) at the new discharge location. The Cormix and dye study shall include analyses of both low and high flow plumes. This information shall be presented as images superimposed over an aerial photo of the river. The report shall include the proposed orientation of the pipe, specific location (if relocated) and includes materials, costs, and a schedule for completion of the work.
2. By four (4) years after the effective date of the final permit, final plans and specifications for the modifications proposed in the PER shall be submitted to DEQ for approval. In addition, all permits, easements or other approvals necessary to complete the work shall be obtained.
3. By five (5) years after the effective date of the final permit, the permittee must have completed the outfall modifications as approved by DEQ.

Commented [NB1]: While I’m sure these statements accurately describe the results of the modeling that Mark S. did in 2013, we now more about the ambient velocity than we did at that time. I think the “slack water” statement is still accurate, but I’m not so sure about these other statements.

Commented [NB2]: I’m assuming I should propose TP limits based on a 25% mixing zone as the endpoint for the regionalization option. A change in the mixing zone doesn’t mean much unless it’s reflected in the limits.

TP limits based on a 25% mixing zone would be:

June – September
AML: 33 lb/day
AWL: 42 lb/day

October – May
AML: 40 lb/day
AWL: 52 lb/day

Compliance Schedule with Regionalization Option

Sandpoint WWTP and Kootenai Ponderay Sewer District have requested a regionalization option be added to both their new permits which would allow them time to examine the feasibility of this direction, to plan the facility and design and construct a regional wastewater treatment plant. This option is likely to include a relocated discharge pipe.

Pursuant to IDAPA 58.01.02.400.03, DEQ may authorize compliance schedules for water quality-based effluent limits issued in a permit for the first time. Federal regulations at 40 CFR 122.47(b) allow for alternative schedules of compliance, in which an NPDES permittee may terminate the discharge of pollutants from the permitted source rather than continuing to operate and meet permit requirements. In this case, while IDEQ expects there will be a permitted discharge of treated sewage from a POTW to the Pend Oreille River for the foreseeable future, the existing WWTPs for the City of Sandpoint and the Kootenai-Ponderay Sewer District may be decommissioned and replaced with a new, regional WWTP.

Sandpoint WWTP cannot immediately achieve compliance with the phosphorus effluent limits resulting from a 25% mixing zone, nor can the existing outfall achieve the mixing necessary to allow for the 47 – 60% and mixing zones for phosphorus, which would result in effluent limits that could be achieved immediately. Therefore, DEQ authorizes a compliance schedule and interim requirements as set forth below. This compliance schedule provides the permittee a reasonable amount of time to achieve the final effluent limits as specified in the permit. At the same time, the schedule ensures that compliance with the final effluent limits is accomplished as soon as possible.

Table 2. Interim Limits and Mixing Zone Compliance

| Parameter | Units | Average Monthly Limit | Average Weekly Limit |
|---|--|-----------------------|----------------------|
| Phosphorus (June-September) | lb/day | 96 | 125 |
| Phosphorus Mixing Zone (June – September) | Interim Limit 74% of the 30Q10 river flow (8,090cfs) | | |

The compliance schedule described below provides the permittee a reasonable amount of time to achieve the final effluent limits as specified in the permit. At the same time, the schedule ensures that compliance with the final effluent limits is accomplished as soon as possible.

1. The permittee must comply with all effluent limitations and monitoring requirements in Part I.B., I.C. and I.D. beginning on the effective date of the permit, except those for which a compliance schedule is specified in Part I.C. of the final permit.
2. The permittee must achieve compliance with the applicable final effluent limitations as set forth in Part I.B. (Table 1) of the permit and the final mixing zone allowance and applicable outfall modification requirements, not later than:
 - a. Five (5) years after the effective date of the final permit, if the decision is not to regionalize.
 - b. Ten (10) years after the effective date of the final permit, if the decision is to regionalize.

Commented [NB3]: I'll let Brett speak for himself on this, but I thought he said that the City may build a new WWTP independently of KPSD, and if they do that, "regionalization" isn't the right word.

Commented [NB4]: I think this needs to be written to cover both of the possible outcomes. Either they improve treatment so they can meet limits based on a 25% (or smaller) mixing zone, or they move their outfall and improve mixing such that they have the larger mixing zones necessary to continue discharging the amounts of phosphorus they've discharged in the past.

Commented [NB5]: Is it DEQ's judgment that Sandpoint can't comply with the 61 lb/day average monthly limit immediately? That was the performance-based limit that I'd calculated from their existing data, meaning, I think they can comply with this limit immediately. We should discuss this.

3. While the schedules of compliance specified in **Part I.C** are in effect, the permittee must complete interim requirements and meet interim effluent limits and monitoring requirements as specified in **Parts I.C and I.D** of the permit.
4. All other provisions of the permit, except the final effluent limits for phosphorus as described in Table 2 of this certification and the final phosphorus mixing zone as described in Table 3 of this certification must be met after the effective date of the final permit.

Interim Requirements for Compliance Schedule

1. By one (1) year after the effective date of the final permit, the permittee must demonstrate to EPA and DEQ that funding for a new facilities plan has been secured.
2. By two (2) years after the effective date of the final permit, the permittee must notify EPA and DEQ of their decision of whether to regionalize wastewater treatment in the areas currently served by the City of Sandpoint WWTP and the Kootenai-Ponderay Sewer District WWTP, resulting in a single point of discharge to the Pend Oreille River. The decision to regionalize shall be evidenced by a firm public commitment satisfactory to the EPA and IDEQ.
 - a. If the decision is to not regionalize, final limits must be met at this time and the requirements of the Phosphorus Mixing Zone section of this certification must be initiated and completed according to the specified schedule.
 - b. If the decision is to regionalize, the permittee must comply with the following requirements:
3. By three (3) years after the effective date of the final permit a facility plan shall be submitted to DEQ for review and approval. The facility plan shall include outlining estimated costs and schedules for completing a regional wastewater treatment plant and implementation of technologies to achieve final effluent limitations. This schedule must include a timeline for pilot testing. It shall also examine how to improve mixing and meet WQS by modifying or relocating the outfall pipe for the new facility. If the pipe is to be relocated either to a different location in the Pend Oreille River (not just an extension of the existing pipe) or to a different waterbody the phosphorus mixing zone requirements 1-3 of this certification are waived.
4. By four (4) years after the effective date of the final permit, the permittee must provide EPA and DEQ with a progress report on funding for the new facility. Copy of notice of bond approval or notice of judicial confirmation is acceptable.
5. By five (5) years after the effective date of the final permit, the permittee must provide EPA and DEQ with written notice that design has been completed, approved by DEQ.
6. By six (6) years after the effective date of the final permit, the permittee must provide EPA and DEQ with a notice that bids for construction have been awarded to achieve final effluent limitations.

7. By seven (7) and eight (8) years after the effective date of the final permit, the permittee must provide EPA and DEQ with brief progress reports of construction as they relate to meeting the compliance schedule timeline.
8. By nine (9) years after the effective date of the final permit, the permittee must provide EPA and DEQ with written notice that construction has been substantively completed on the facilities to achieve final effluent limitations.
9. By ten (10) years after the effective date of the final permit, the permittee must provide EPA and DEQ with a written report providing details of a completed start up and optimization phase of the new treatment system and must achieve compliance with the final effluent limitations of Part I.B.

Mixing Zones

Pursuant to IDAPA 58.01.02.060, DEQ authorizes the mixing zones summarized in Table 3 for the current outfall location.

Table 3: Mixing Zones

| Pollutant | Mixing Zone (% of critical flow volumes of the Pend Oreille River) |
|------------------------------|---|
| ammonia | |
| arsenic | |
| chlorine | |
| chromium III | |
| chromium IV | |
| copper | |
| cyanide | |
| lead | |
| mercury | |
| nitrate + nitrite | |
| zinc | |
| Phosphorus, June - September | 74 – Interim Limit |
| Phosphorus, June - September | 47 – Final Limit with approved outfall modifications |
| Phosphorus, October – May | 60 – Final Limit with approved outfall modifications |
| phosphorus | ≤ 25 – Final Limit* (Regionalization Option) <i>*placeholder value, actual mixing zone will reflect an area no larger than necessary</i> |

Commented [NB6]: See my comment above; I think they can meet the 61 lb/day limit (based on a 47% mixing zone) immediately.

DRAFT

